MGT388 Finance and Law for Engineers

Finance Lecture 2 Notes

Financial Statements Analysis

The analysis of financial statements involves evaluating different areas of company's performance in the perspective of different user needs.

Ratio analysis is an essential tool to make three main typologies of comparison: intracompany, intercompany and with industry averages.

We use the term intracompany to indicate the comparison of an item or financial relationship within a company in the current year with the same item or relationship in one or more prior years, to find the amount of the increase or decrease.

The term intercompany identifies the comparison of an item or financial relationship of one company with the same item or relationship in one or more competing companies, on the basis of the published financial statements for the same accounting period.

Finally, a company can compare an item or financial relationship with industry average published by financial ratings organisations, such as Moody's or Standard & Poor's. This type of comparison provides information as to a company's relative performance within the industry.

Moreover, ratios can be easily and effectively represented in charts and graphs and they can be used as key performance indicators in strategic management accounting. For example, operating profit margin, expressed as a percentage, is an indicator of cost efficiency.

Profitability ratios

Profitability ratios measure the income or operating success of a company for a given period of time. Income, or the lack of income, affects the company's ability to obtain debt and equity. If a company shows a loss for one or more accounting periods, it can be difficult to be funded.

Income also affects the company's liquidity position because it is strictly linked with cash, cash equivalents and trade receivables, that, in case of losses, will tend to decrease over time. Moreover, a company with a poor performance in profitability will need to increase its liabilities and this will lead to an increase in "cash outflows" to pay a higher amount of trade payables towards the suppliers that will try to impose higher prices and also to pay a higher amount of interests on debts towards banks and other financial institutions. Additionally, those interests will represent higher costs in the income statement, furtherly depressing income or worsening loss.

Income also affects the company's ability to grow because it should be the main source of self-financing through the generation of cash flows.

As a consequence, both creditors and investors are interested in evaluating profitability or, in other terms, earning power. Analysts frequently use profitability as the ultimate test of management's operating effectiveness.

Return on capital employed (ROCE)

A primary measure of business performance is the Return on capital employed, which can be calculated dividing operating profit by equity funds plus non-current liabilities.

Operating profit is a flow referred to a period of time, the accounting period, and represents the profit achieved during that period after all operating expenses have been deducted from revenues from operations. Financing expenses are not included here because they are deducted after the calculation of operating profit.

Equity and non-current liabilities are both measured in a precise day at the end of the period. To be accurate, we should compare operating profit with the average long-term capital (equity and borrowings) invested in the business.

Equity is the owner's claim on the business and, in the case of a limited company, it comprises the sum of the share capital and reserves.

Reserves derive from profits and gains which have not been distributed to the shareholders through dividends or reduced by losses.

Definitely, the return on capital employed ratio expresses the operating profit as a percentage of the long-term funds invested in the business.

Gross profit margin

The gross profit margin ratio can be calculated dividing the gross profit of the business by the sales revenue. Both values come from the income statement and they are flows.

In interpreting gross profit margin, we should consider first of all that gross profit depends on cost of sales.

Second, we should make sure that a policy of increasing market share is not linked to a reduction in sales prices, otherwise we will see a reduced margin in the future.

Third, if new entrants join the market, the increased competition may force down sales prices and consequently reduce gross profit margin.

These considerations are essential to understand and prevent the possible dynamics of this ratio over time.

Operating profit margin

Operating profit margin can be calculated dividing Operating profit by revenue.

Operating profit is calculated deducting the administrative and distributive expenses from the cost of sales, and it is the profit before interest and taxation.

This ratio mainly depends on the company's ability in cost control.

Net asset turnover

Looking at the efficiency in the asset utilisation, we need to calculate the net asset turnover dividing the revenue by equity plus non-current liabilities. There is also an alternative formula that divides revenue by assets. This is possible because the total amount of assets always equals the sum of equity and liabilities.

In the interpretation of this ratio, we should be able to compare this figure over time for the same company and against companies in the same industry.

Moreover, non-current assets, such as PP&E and intangible assets, must be depreciated over time, so a company with old assets will have a low figure for assets and as a consequence it will show a higher turnover.

Moreover, it is also true that for definition assets will provide benefits to the company in the future, but the investments in assets may not translate to increased revenue immediately. It takes some time depending on the activity's nature and many other factors.

Relationship among ratios

Finally, we find that there is an important relationship among ratios.

The Return on capital employed (ROCE) can be found multiplying the operating profit margin by the net asset turnover.

This formula is very effective to understand that the company's ability to deploy capital employed depends both on profitability and on efficiency.

Working capital management

Liquidity is essential for a business to survive and avoid bankruptcy. Cash is the priority because a business will go bankrupt it is no more able to pay its debts towards the employees for salaries and wages, towards the suppliers for purchases, towards the bank for borrowings, towards the shareholders for capital invested, etc.

The availability of cash depends on profitability, but a business may be at the same time profitable and short in liquidity because of poor management of working capital, so not able to meet its debts as they fall due.

Working capital is the difference between current assets, such as cash and cash equivalent, trade receivables and inventory, and current liabilities, such as trade payables, tax payables, and overdrafts.

First of all, a company must avoid holding too much inventory for too long. On the one hand, the inventory is needed to prevent any interruption in the provision of factors of productions upstream or merchandises and the delivery of products and services to customers downstream. On the other hand, inventory is very expensive and holds the cash in place, preventing it from circulating.

Downstream inventory contains unsold goods, so until they remain in the inventory they do not generate cash and sales revenue. Moreover, the inventory needs a physical space to buy or rent, incurring a cost. Therefore, the golden rule is to hold only the minimum needed inventory and for the shortest possible time.

Second, a company should be able to apply a good collection policy to be effective in collecting trade receivables from customers as soon as possible and so increase cash.

Third, a prompt payment of trade payables towards the suppliers is to be preferred, to receive a reduction in purchasing prices and to keep good relationships with the suppliers.

A good working capital management protects the company from bank overdrafts, which are quite expensive short-term liabilities. A bank overdraft enables a business to maintain a negative balance on its bank account and it is a very flexible form of borrowing, but on the other side the interest rates are higher than those for a term loan and the overdraft is repayable on demand so potentially risky for a company's liquidity.

Efficiency ratios

They are all expressed as a period, so a certain number of days.

Inventory holding period

The inventory holding period can be calculated by dividing closing inventory by cost of sales and then multiplying the result by 365 days to express it in days.

Usually, in a manufacturing company, the inventory is classified into three categories: finished goods, works in process, and raw materials. Finished goods inventory includes manufactured items that are completed and ready for sale. Work in process is that portion of manufactured inventory that has been placed into the production process but is not yet complete. Raw materials are the basic goods that will be used in production but have not yet been placed into production.

Many companies have significantly lowered inventory levels and costs using just-in-time inventory methods, so they manufacture or purchase goods just in time for use.

Trade receivable collection period

The second ratio is the trade receivable collection period that we obtain by dividing trade receivables by revenue and then multiplying the result by 365 days, as for the previous ratio.

A collection period should not be too long or too short and this is a professional judgement made by accountants.

If a collection period is too long, it may indicate a poor collection policy or anyway the inability of a company to collect money from its customer. Something to be improved in this process.

Also, it may indicate that some customers are refusing to pay because they have not been satisfied by the quality of products.

If the period is too short, there is a risk to lose customers because they will prefer the competitors who offer longer credit terms. Moreover, we should consider if a short collection period hides a price policy that offers discounts for prompting the payment but reduces margins.

Trade payable payment period

Finally, the trade payable payment period can be obtained by dividing the trade payables by the cost of sales and then multiplying by 365 days, as usual.

In interpreting the trade payable payment period, we need to consider that it should match the trade receivable collection period and it should not be too long for two main reasons.

First, because a promptly payment allows to receive some reduction in purchasing prices, so enhancing profitability.

Second, because a short payment period will help keeping good relationships with suppliers.

Liquidity ratios

Liquidity ratios measure the short-term ability of the company to pay its maturing obligations and to meet unexpected needs for cash. Short-term creditors, such as bankers and suppliers, are particularly interested in assessing liquidity.

The ratios we use to determine the enterprise’s short-term debt-paying ability are current ratio and acid-test ratio.

Current ratio

Current ratio is a widely used measure and is computed by dividing current assets by current liabilities. Generally speaking, a current ratio around 2 is judged to be adequate and indicates that debts could be met when they fall due.

However, to provide an accurate interpretation of this ratio we should make reference to the industry average, as we discussed in lecture 3. For example, typically supermarkets have low current ratios because their customers pay immediately, so they have a low amount of trade receivables, and they hold fast-moving inventories. Moreover, they enjoy a high negotiation power, so they usually have a high level of trade payables because they receive long delays from suppliers. Finally, they invest cash in developing or improving their site, so the amount of cash among current assets is low as well. Summarising, for supermarkets cash, trade receivables and inventory tend to be low. Trade payables tend to be high, so current ratio tend to be low.

A low current ratio expresses a poor liquidity and ability to pay debts in the short-term, so with reference to one year. On the other hand, is a high current ratio good?

Not so much, it depends on how much it is high and the answer to this question requires a professional judgement for a specific business.

A very high current ratio can hide some inefficiencies. First of all, a company should not hold large reserves of cash, but it should rather invest cash to be more productive and generate profits.

Second, the amount of inventory and trade receivable should not be too high, otherwise probably the company is not managing them efficiently so stocks become obsolete, trade receivable are not collected from customers and both these inefficiencies can cause cash to be tied up.

Acid-test (or quick) ratio

Acid-test (or quick) ratio is a measure of a company's immediate short-term liquidity. We compute this ratio with a similar formula, but at the numerator we deduct the inventory from current assets. We remove the inventory because it is the less liquid assets among current assets, due to the time lag of turning inventory into cash by selling products and then collecting trade receivables.

Some authors state that the minimum level for this ratio is 1 time. However, many highly successful businesses, have an acid-test ratio below 1 without suffering liquidity problems.

Moreover, we should compare this ratio with the industry average as usual.

Solvency ratios

Solvency ratios measure the ability of a company to survive over a long period of time. Long-term creditors and shareholders are particularly interested in assessing the potential risk of their investment. In other terms, a company's ability to pay interests as they come due and to repay the face value of debt at maturity.

For this purpose, we need to look at the medium-term capital structure of a business.

We point out here the difference between debt and equity.

Financing activities (in other words, liabilities or debt) result in interest expense, which is the payment for the use of money. Interest is the difference between the amount borrowed (which is called the principal) and the amount repaid. The amount of interest to be paid is usually stated as a

rate over a specific period of time and the rate of interest is generally stated as an annual rate. Therefore, the amount of interest involved in any financing transaction is based on three elements:

1. Principal, which is the original amount borrowed by a company.
2. Interest rate, which is an annual percentage of principal.
3. And time, which is the number of years that the principal is borrowed.

Simple interest is the return on principal for one period and it can be calculated by multiplying the principal by the rate by the time.

For example, if you borrow £ 10,000 for 1 year at 4% interest rate, you will pay an interest expense of £ 400. In practice, the amount repaid will be the sum of principal (10,000) and interest expense (400), so 10,400 pounds.

Therefore, a company knows that it will pay interests at a certain rate on its liabilities.

Equity (also known as residual equity) is the ownership claim on total asset.

The remuneration of an investment in equity is totally different from the payment of interest on liabilities. The distribution of cash or other assets to shareholders is called a dividend.

Dividends reduce retained earnings but they are not an expense.

A company first determines its revenues and expenses and then computes net income or net loss. If it has net income, and decides it has no better use for that income, a company may decide to distribute a dividend to its owners.

The amounts of dividends paid to shareholders are not determined by a certain rate, but they are determined with a decision of the board of administrators, ratified by shareholders in the ordinary general assembly meeting.

Also the presentation in the financial statements is totally different. Interest expenses are presented as a cost in the Income Statement and so deducted from operating profit to find profit before tax.

Dividends are presented in the Statement of Financial Position as a reduction of retained earnings.

For this reason, investors face a risk of not receiving an annual return on their investment and also non having their investment repaid. They need to have a look at the solvency ratios to assess if the company they invested in is able to survive in the medium – long term.

The solvency of a business can be assessed by looking at its financial gearing (also known as financial leverage). A high level of non-current liabilities (which are long-term debt) exposes a business to a potential financial risk. A business that cannot repay its loans will fail in the medium-long term.

Gearing ratio

Gearing ratio is concerned with assessing the relationship between equity and debt financing and can be calculating by dividing the sum of loans and overdrafts by the sum of share capital and retained earnings.

At the numerator, debt includes non-current liabilities and preference shares.

Preference shares are a particular class of shares having a preference or priority over ordinary shares. Typically, they have a priority as to distribution of income (through dividends) and assets in the event of liquidation. However, they sometimes do not have voting rights. If they carry a fixed rate of interest, they should be regarded as debt.

If a business has a current loan or overdraft that is semi-permanent, it should also be regarded as debt.

At the denominator, equity includes share capital and retained earnings.

Interest ratio

Interest cover ratio expresses the ability of a business to meet the payment of interest payables from the operating profit. It is calculated by dividing operating profit by interest payable.